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# STRENGTH AND POWER CHARACTERISTICS OF YOUNG PROFESSIONAL RUGBY UNION PLAYERS

Ben Jones, Joshua Darrall-Jones, Kevin Till

[b.jones@leedsbeckett.ac.uk](mailto:b.jones@leedsbeckett.ac.uk)  @23benjones

Leeds Beckett University,  
Institute for Sport, Physical  
Activity & Leisure, Leeds, UK



Institute for  
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Activity & Leisure

## Introduction

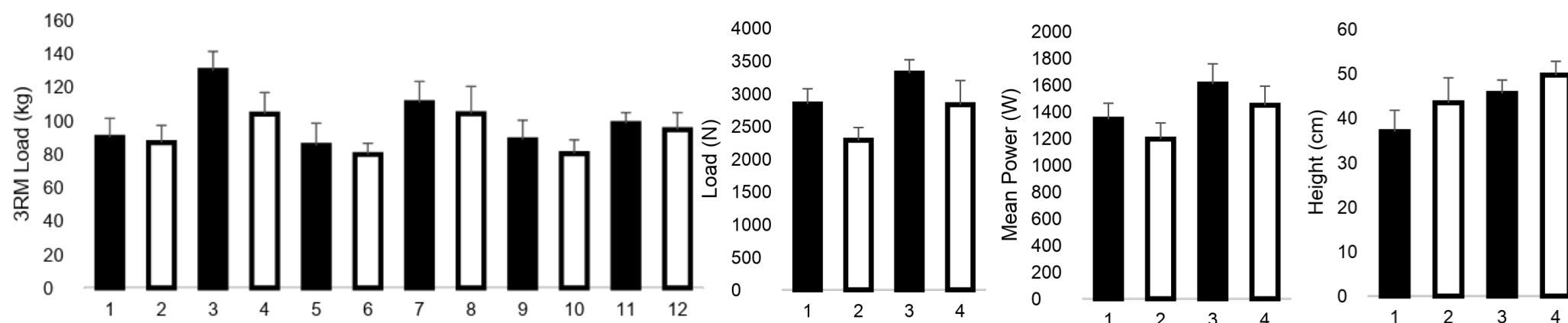
Rugby union requires athletes to have high levels of strength and power. Rugby union forwards and backs are involved in collisions, rucks and mauls, although forwards engage in more static exertions (e.g., scrums) and backs more running. Given the demands of rugby union, the development of strength and power in young players would appear a priority (Darrall-Jones et al., 2015).

## Methods

Thirty-nine young male rugby union players from a professional academy (U18,  $n=24$  [forwards  $n=12$ , backs  $n=12$ ; age  $17\pm1$  yrs, body mass  $93.8\pm7.0$  and  $78.7\pm6.9$  kg]; U21,  $n=15$  [forwards  $n=9$ , backs  $n=6$ ; age  $19\pm1$  yrs, body mass  $105.5\pm8.5$  and  $87.6\pm10.7$  kg]) were tested at the beginning of pre-season. Testing took place over 2 sessions. Session 1 = countermovement jump (CMJ) and isometric mid-thigh pull (IMTP) on a force plate, with specialist rack for the IMTP. Session 2 = 3 repetition maximum (3RM) assessments of front squat, bench press and prone row. Between and within squad positional differences were assessed to determine if measures were greater ( $\uparrow$ ), similar ( $\leftrightarrow$ ) or less ( $\downarrow$ ) than the smallest practical difference (SPD [ $0.2 \times$  between-subject standard deviation]; Hopkins, 2004) based on Cohen's  $d$  effect size (ES) principle.

## Results

U18 forwards had *likely*  $\uparrow$  prone row, *very likely*  $\uparrow$  CMJ mean power and *almost certainly*  $\uparrow$  IMTP, but *very likely*  $\downarrow$  CMJ jump height than U18 backs. Similarly, U21 forwards had *very likely*  $\uparrow$  front squat and IMTP, and *likely*  $\uparrow$  CMJ mean power, but *likely*  $\downarrow$  CMJ jump height than U21 backs. For U21s, both forwards and backs had *almost certainly* and *very likely*  $\uparrow$  front squat, *almost certainly*  $\uparrow$  bench press, *very likely*  $\uparrow$  prone row, *almost certainly* and *very likely*  $\uparrow$  CMJ jump height and mean power and IMTP.



## Conclusions

Rugby union backs had  $\uparrow$  CMJ jump height whereas forwards had  $\uparrow$  power and isometric strength, which may represent their positional requirements. U21s had  $\uparrow$  strength and power than U18s, suggesting younger players should continue to focus on strength and power. The longitudinal change and relationship to match performance requires further research.

## Practical Applications

Coaches working with young rugby union players should focus on developing strength and power in all players. When a sufficient base is achieved, it may be beneficial for backs to focus on power, and forwards to focus on strength, while considering the complex nature of rugby union, ensuring both have adequate strength and power.

## References

Darrall-Jones J, Jones B, Till K. (2015) Anthropometric and Physical Profiles of English Academy Rugby Union Players. *Journal of Strength and Conditioning Research*. 29 (8) 2086-96.